

Applicant : Choi et al.  
Serial No. : 10/053,535  
Filed : January 15, 2002  
Title : CARBON MONOXIDE AS A BIOMARKER AND THERAPEUTIC AGENT

Art Unit : 1616  
Examiner : Frank I. Choi

EXAMINER'S AMENDMENT EXHIBIT A

1-42. (Canceled)

43. (Currently amended) A method of treating emphysema secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from emphysema secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

44. (Currently amended) A method of treating bronchitis secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from bronchitis secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

45. (Currently amended) A method of treating cystic fibrosis secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from cystic fibrosis secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

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46. (Currently amended) A method of treating pneumonia secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from pneumonia secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

47. (Currently amended) A method of treating interstitial lung disease secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from interstitial lung disease secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

48-49. (Canceled)

50. (Currently amended) A method of treating adult respiratory distress syndrome secondary to or resulting in oxidative stress to a patient, comprising:

identifying a patient suffering from adult respiratory distress syndrome secondary to or resulting in oxidative stress; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

51-53. (Canceled)

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54. (Currently amended) The method of claim 43, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

55. (Previously presented) The method of claim 54, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

56. (Previously presented) The method of claim 43, wherein the patient is a human.

57. (Currently amended) A method of treating asthma in a human patient, comprising:  
identifying a human patient suffering from asthma; and  
administering to the patient a therapeutically effective amount of a gaseous composition  
comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the  
~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

58. (Previously presented) A method of treating asthma in a patient, comprising:  
identifying a patient suffering from asthma; and  
administering to the patient a therapeutically effective amount of a composition  
comprising carbon monoxide, wherein the composition contains 0.005% to 0.05% carbon  
monoxide, wherein the composition is administered as an inhaled gas.

59. (Previously presented) The method of claim 58, wherein the patient is a human.

60-61. (Canceled)

62. (Currently amended) A method of treating inflammation in a patient, comprising:  
identifying a patient suffering from inflammation of at least one organ selected from a  
group consisting of: kidney, heart, liver, and lung; and  
administering to the patient a therapeutically effective amount of a gaseous composition  
comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the  
inflammation is of a type selected from a group consisting of: acute, allergic, alternative,

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atrophic, catarrhal, croupous, fibrinopurulent, fibrinous, immune, hyperplastic, proliferative, subacute, serous and serofibrinous inflammation, and wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

63. (Currently amended) A method of treating inflammation in a human patient, comprising:

identifying a human patient suffering from inflammation of at least one organ selected from a group consisting of: kidney, heart, ~~liver~~, and lung; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat inflammation in the patient, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

64. (Currently amended) A method of treating inflammation in a patient, comprising: identifying a patient suffering from or at risk of inflammation of at least one organ selected from the group consisting of: kidney, spleen and skin; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising gaseous carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat inflammation in the patient, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

65. (Currently amended) A method of reducing inflammation secondary to sepsis in a patient, comprising:

identifying a patient suffering from or at risk of sepsis; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby reduce inflammation secondary to sepsis, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

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66. (Currently amended) A method for reducing inflammation associated with a wound, the method comprising:

identifying a patient suffering from a wound; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the amount is sufficient to reduce inflammation associated with the wound, wherein the ~~composition~~ is administered as an inhaled gas patient inhales the gaseous composition.

67. (Currently amended) A method of treating sepsis in a patient, comprising:

identifying a patient suffering from or at risk of sepsis; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat sepsis in the patient, wherein the ~~composition is administered as an inhaled gas patient~~ inhales the gaseous composition.

68. (Currently amended) A method of treating inflammation associated with arthritis in a patient, comprising:

identifying a patient suffering from or at risk for arthritis; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat inflammation associated with arthritis in the patient, wherein the ~~composition is~~ administered as an inhaled gas patient inhales the gaseous composition.

69. (Currently amended) A method of treating a patient to reduce oxidative stress associated with hyperoxia, comprising:

identifying a human patient suffering from or at risk for oxidative stress associated with hyperoxia; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby

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reduce oxidative stress associated with hyperoxia, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

70. (Previously presented) The method of claim 69, wherein the composition comprises carbon monoxide at a concentration of at least 50 ppm.

71. (Previously presented) The method of claim 69, wherein the composition comprises carbon monoxide at a concentration of at least 100 ppm.

72. (Previously presented) The method of claim 69, wherein the composition comprises carbon monoxide at a concentration of at least 250 ppm.

73. (Previously presented) The method of claim 69, wherein the composition contains carbon monoxide at a concentration of about 50 ppm to about 500 ppm.

74. (Currently amended) A method of treating a patient to reduce hyperoxic lung injury, comprising:

identifying a human patient suffering from or at risk for hyperoxic lung injury; and  
administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby reduce hyperoxic lung injury, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

75. (Previously presented) The method of claim 74, wherein the composition comprises carbon monoxide at a concentration of at least 50 ppm.

76. (Previously presented) The method of claim 74, wherein the composition comprises carbon monoxide at a concentration of at least 100 ppm.

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77. (Previously presented) The method of claim 74, wherein the composition comprises carbon monoxide at a concentration of at least 250 ppm.

78. (Previously presented) The method of claim 74, wherein the composition contains carbon monoxide at a concentration of about 50 ppm to about 500 ppm.

79-88. (Canceled)

89. (Currently amended) A method of treating inflammation associated with Alzheimer's disease or Parkinson's disease, comprising:

identifying a patient suffering from or at risk for Alzheimer's disease or Parkinson's disease; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat inflammation associated with Alzheimer's disease or Parkinson's disease, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

90-95. (Canceled)

96. (Currently amended) A method of treating inflammation in a patient, comprising:

identifying a patient suffering from inflammation of at least one organ selected from the group consisting of brain, spleen, and skin; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, wherein the inflammation is of a type selected from the group consisting of acute, allergic, alternative, atrophic, catarrhal, croupous, fibrinopurulent, fibrinous, immune, hyperplastic, proliferative, subacute, serous and serofibrinous inflammation, wherein the ~~composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

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97. (Currently amended) A method of treating inflammation in a human patient, comprising:

identifying a patient suffering from inflammation of at least one organ selected from the group consisting of brain, spleen, and skin; and

administering to the patient a therapeutically effective amount of a gaseous composition comprising carbon monoxide at a concentration of about 10 ppm to about 3000 ppm, to thereby treat inflammation in the human patient, wherein ~~the composition is administered as an inhaled gas~~ patient inhales the gaseous composition.

98-104. (Canceled)

105. (Previously presented) The method of claim 65, wherein the patient is a human.

106. (Canceled)

107. (Previously presented) The method of claim 66, wherein the patient is a human.

108. (Canceled)

109. (Previously presented) The method of claim 67, wherein the patient is a human.

110. (Canceled)

111. (Previously presented) The method of claim 68, wherein the patient is a human.

112-114. (Canceled)

115. (Previously presented) The method of claim 89, wherein the patient is a human.

116-118. (Canceled)

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119. (Previously presented) The method of claim 96, wherein the patient is a human.

120-121. (Canceled)

122. (Currently amended) The method of claim 44, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

123. (Previously presented) The method of claim 122, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

124. (Previously presented) The method of claim 44, wherein the patient is a human.

125. (Canceled)

126. (Currently amended) The method of claim 45, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

127. (Previously presented) The method of claim 126, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

128. (Previously presented) The method of claim 45, wherein the patient is a human.

129. (Canceled)

130. (Currently amended) The method of claim 46, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

131. (Previously presented) The method of claim 130, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

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132. (Previously presented) The method of claim 46, wherein the patient is a human.

133. (Canceled)

134. (Currently amended) The method of claim 47, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

135. (Previously presented) The method of claim 134, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

136. (Previously presented) The method of claim 47, wherein the patient is a human.

137. (Canceled)

138. (Currently amended) The method of claim 50, wherein the ~~gas is administered as~~  
gaseous composition is a mixture comprising carbon monoxide, nitrogen and oxygen.

139. (Previously presented) The method of claim 138, wherein the concentration of carbon monoxide in the mixture is monitored with a carbon monoxide analyzer.

140. (Previously presented) The method of claim 50, wherein the patient is a human.

141-158. (Canceled)

159. (Previously presented) The method of claim 45, wherein the composition comprises carbon monoxide at a concentration of at least 50 ppm.

160. (Previously presented) The method of claim 45, wherein the composition comprises carbon monoxide at a concentration of at least 100 ppm.

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161. (Previously presented) The method of claim 45, wherein the composition comprises carbon monoxide at a concentration of at least 250 ppm.

162. (Previously presented) The method of claim 45, wherein the composition contains carbon monoxide at a concentration of about 50 ppm to about 500 ppm.

163. (New) The method of claim 64, wherein the organ is kidney.

164. (New) The method of claim 43, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

165. (New) The method of claim 44, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

166. (New) The method of claim 45, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

167. (New) The method of claim 46, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

168. (New) The method of claim 47, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

169. (New) The method of claim 50, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

170. (New) The method of claim 57, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

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171. (New) The method of claim 62, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

172. (New) The method of claim 63, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

173. (New) The method of claim 64, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

174. (New) The method of claim 65, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

175. (New) The method of claim 66, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

176. (New) The method of claim 67, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

177. (New) The method of claim 68, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

178. (New) The method of claim 69, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

179. (New) The method of claim 74, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

180. (New) The method of claim 89, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

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181. (New) The method of claim 96, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

182. (New) The method of claim 97, wherein the gaseous composition comprises carbon monoxide at a concentration of about 10 ppm to about 2500 ppm.

183. (New) The method of claim 62, wherein the organ is kidney.

184. (New) The method of claim 63, wherein the organ is kidney.

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